IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:
David A. Wood et al.

Serial No. 09/487,529

Filed: 01/19/2000

For: System and Method for Enhancing Communication Between Devices in a Computer System

§ Group Art Unit: 2194
§
§ Examiner: Hoang, Phuong N.
§
§ Atty. Dkt. No.: 5181-38400
§ P4359

CERTIFICATE OF MAILING
37 C.F.R. § 1.8

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APPEAL BRIEF

Box Appeal Brief-Patents
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P.O. Box 1450
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Sir/Madam:

Further to the Notice of Appeal filed September 28, 2006, Appellants present this Appeal Brief. Appellants respectfully request that this appeal be considered by the Board of Patent Appeals and Interferences.

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I. REAL PARTY IN INTEREST

The subject application is owned by Sun Microsystems, Inc., a corporation organized and existing under and by virtue of the laws of the State of Delaware, and having its principal place of business at 4150 Network Circle, Santa Clara, CA 95054, as evidenced by the assignment recorded at Reel 010522, Frame 0250.

II. RELATED APPEALS AND INTERFERENCES

No other appeals or interferences are known which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-30 are pending in the present application and are the subject of this appeal. Claims 1-30 stand finally rejected under 35 U.S.C. § 103(a). A copy of Claims 1-30, as on appeal (incorporating all amendments), is included in the Appendix hereto.

IV. STATUS OF AMENDMENTS

No amendment to the claims has been filed subsequent to the final rejection. The Appendix hereto reflects the current state of the claims.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A sending device and a target device may be configured to communicate according to a packet-based communication protocol via a communications medium. For example, the sending device may be configured to convey a request to the target device. The target device may be configured to convey a response after receiving or processing the request from the sending device. The response conveyed from the target device may comprise an acknowledgment (ACK) or a negative acknowledgment (NAK) according to the communications protocol employed by the devices. *See at least* page 4, lines 10-24.

In certain situations, the target device may be temporarily unable to process the request from the sending device. These may be referred to as a "temporarily unavailable conditions" and may occur when the target device is handling another operation that temporarily prevents the processing of the request from the sending device. Such operations may include a temporarily loss of system resources (e.g., a dynamic reconfiguration of a node), a temporary lack of processing resources on the target device, or a lack of a valid virtual to physical address translation in cases where the contents of the request are to be written in the virtual address space of the target device's node. In response to detecting a temporarily unavailable condition, target device may be configured to convey a negative acknowledgment (NAK) to the sending device. In one embodiment, the target device may be configured to convey different types of NAKs depending on the type of temporarily unavailable condition detected. *See at least* page 4, line 26 – page 5, line 9.

In one embodiment, a NAK may include a delay value that may be used by the sending device as a hint for determining how long to delay the resending of its request. Using the delay value, the sending device may advantageously resend its request at a time when the target device may be able to process the request, i.e., after sufficient time to allow the temporarily unavailable condition to be cleared at the target device. In certain configurations or for certain types of temporarily unavailable conditions, the sending device may be configured to ignore the delay value and independently determine when to resend its request. *See at least* page 5, lines 10-16.

In one embodiment, the target device may be configured to generate a delay value according to the type of operation that is causing a temporarily unavailable condition. In this manner, different delay values can be generated for different types of operations, because the amount of time necessary for the target device to clear the temporarily unavailable condition may vary among the different types of operations. Also, the target device may generate delay values according to a set value for each type of operation, a

programmed value for each type of operation, or a dynamically calculated value for each type of operation. The target device may be configured to store historical data from previous temporarily unavailable conditions and may calculate delay values from this data. The target device may also keep track of the number of outstanding responses it has sent for a particular temporarily unavailable condition. In doing so, the target device may convey delay values that indicate increasingly longer delay periods as the number of outstanding responses increases. Additionally, the delay value may be encoded to minimize the size and/or number of packets needed for the NAK. *See at least* page 5, line 18 – page 6, line 1.

In one embodiment, a policy layer may determine a retry limit for a particular request sent by the sending device. If the sending device resends the request in excess of the retry limit, the policy layer may be configured to detect an error and may initiate an error recovery mechanism based on the type of NAK most recently received from the target device. The type of NAK may allow for different error recovery mechanisms based on different types of temporarily unavailable conditions at the target device. In other embodiments, the policy layer may be configured to detect an error and may initiate an error recovery mechanism based on the delay value corresponding to the most recently received NAK from the target device. *See at least* page 6, lines 15-23.

VI. GROUNDS OF REJECTION

1. Claims 1-7, 15-16, 18-21, 23, and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I (U.S. Patent # 6,088,335) in view of Shah et al. (U.S. Patent # 5,410, 536).
2. Claims 8-9 and 12-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Bailey et al. (U.S. Patent # 5,189, 734).
3. Claims 10 and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Bailey, and further in view of Chambers.
4. Claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Bailey, and further in view of Shah.
5. Claims 17, 22, 24-26, and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah, and further in view of Bailey.
6. Claim 29 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah, and further in view of Barlow.
7. Claim 30 was rejected under 35 U.S.C. §103(a) as being unpatentable over Seo (U.S. Patent # 6,581,176) in view of Bailey.

VII. ARGUMENT

A. Claims 1-3, 5-7, 15-16, 18-21, 23, and 28-29

The Examiner rejected claims 1-3, 5-7, 15-16, 18-21, and 23 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I (U.S. Patent # 6,088,335) in view of Shah et al. (U.S. Patent # 5,410, 536). The Examiner rejected claim 28 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah, and further in view of Bailey. The Examiner rejected claim 29 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah, and further in view of Barlow. Appellant respectfully traverses these rejections in light of the following remarks.

Appellant notes that to establish a prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP 2143.03.

Appellant respectfully submits that Chih-Lui I and Shah, whether alone or combined, fail to teach or suggest "wherein, in response to said first device re-conveying said first request to said second device in excess of a retry limit, said first device and said second device are configured to cause an error recovery mechanism to be initiated" as recited by claim 1.

The Examiner contends that these features are taught in column 8, lines 25-30 of Chih-Lui I, and in column 19, lines 50-63 of Shah. Appellant respectfully disagrees. Chih-Lui I teaches, in column 8, lines 25-30,

> In step 415, this assignment is then transmitted to the mobile. If the scheduled list is longer than the threshold L, the mobile is told to retry later (Retry Delay) in step 415. The base station selects the value of this parameter based upon loading conditions at that base station. When a mobile receives a delay parameter in a data burst assignment message 415, it initiates such a delay, step 417, before starting its transmission of the assigned burst length, step 419, and at the assigned data

rate, step 421. In an alternate embodiment, the mobile may be required to wait for an explicit BEGIN message to begin high data rate transmission. (Emphasis added)

While Chih-Lui I teaches that the mobile device waits for a specific amount of time corresponding to the delay parameter before starting its transmission of the assigned burst length, Chih-Lui I fails to teach or suggest initiating an error recovery mechanism in response to "re-conveying said first request to said second device **in excess of a retry limit**" as recited by claim 1. Specifically, Chih-Lui I fails to teach the concept of a "retry limit" and initiating an error recovery mechanism in response to exceeding the "retry limit".

Furthermore, Appellant notes that Shah teaches, "Error recovery is symmetrical for both nodes. When an error occurs both nodes will enter the `check` state and **invoke the Link ERP**." (Column 18, Lines 64-66) (Emphasis added) Also, Shah teaches, in column 19, lines 17-63:

> The first (or only) node that detects the error enters the `check` state and invokes its Link ERP, **The Link ERP functions** as follows:
>
> 1. The ERP waits until the transmitter has finished sending the current packet, if any.
>
> 2. The ERP then builds the Link Status Byte by reference to the hardware.
>
> 3. If the line driver or receiver have detected a line fault then the ERP tries to reset the error. If this fails then the application is alerted via an ERP exit (`Permanent line fault`).
>
> .
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> .
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> .
>
> 8. The implementation must protect against the **ERP looping** if there is a permanent error. Since both nodes are always involved in error recovery it is sufficient if only one node provides this protection, eg, the upper node in a hierarchical system. The following is an example of one method that can be used. **Each invocation of the ERP increments a retry counter** that is reset to zero periodically by a timer. If the number of retries in one period of the timer exceeds some maximum value then the ERP waits 10 ms to ensure the remote node recognises that retry is being aborted. The

application is then alerted via an **ERP exit** ('Retry limit exceeded'). This scheme also protects against **excessive use of the ERP** in the event of severe external noise. (Emphasis added)

Appellant notes that the method of Shah cited by the examiner prevents the Error Recovery Procedure (ERP) from looping when there is a permanent error and prevents excessive use of the ERP. Each invocation of the ERP increments a retry counter, and if the number of ERP retries in one period of the timer exceeds a maximum value (retry limit), the operation is aborted via an ERP exit. In other words, in Shah, after detecting an error, the ERP is invoked. If the **Error Recovery Procedure (ERP)** is invoked too many times (i.e., in excess of a retry limit) within one period of the timer, a permanent error likely exists and therefore the ERP is aborted. However, Chih-Lui I and Shah, whether alone or combined, fail to teach or suggest "in response to said first device **re-conveying said first request** to said second device **in excess of a retry limit**, said first device and said second device are configured to cause an error recovery mechanism to be **initiated**" as recited by claim 1.

In the present invention, as recited in claim 1, after the second device sends a response to the first device indicating a temporarily unavailable condition, the first device is configured to re-convey the **first request** at a later time and possibly multiple times. An error recovery mechanism is initiated if the **first request** is re-conveyed to the second device in excess of a retry limit.

While Shah teaches aborting the Error recovery Procedure (ERP) if the ERP is invoked in excess of a retry limit during one period of the timer, Shah fails to teach initiating the ERP if a first request from a first device is re-conveyed to a second device in excess of a retry limit.

In accordance, claim 1 is believed to patentably distinguish over Chih-Lui I and Shah, whether alone or combined. Claims 2-3, 5-7, 21, 23, and 28-29 depend on claim 1 and are therefore believed to patentably distinguish over the cited references, whether alone or combined, for at least the same reasons.

In addition, Appellant respectfully submits that Chih-Lui I and Shah, whether alone or combined, fail to teach or suggest "in response to said first device re-conveying said first request to the second device in excess of a retry limit, initiating an error recovery mechanism" as recited by claim 15. Claim 15 recites features similar to those highlighted above with regard to claim 1 and is therefore believed to patentably distinguish over Chih-Lui I and Shah, whether alone or combined, for at least the reasons given in the above paragraphs discussing claim 1. Claims 16 and 18-20 depend on claim 15 and are therefore believed to patentably distinguish over Chih-Lui I and Shah, whether alone or combined, for at least the same reasons.

Since the rejection is not supported by the teaching of the cited references, Appellant respectfully requests reversal of the Examiner's rejection of Claims 1-3, 5-7, 15-16, 18-21, 23, and 28-29.

B. Claims 8-14, 17, and 24-26

The Examiner rejected claims 8-9 and 12-13 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Bailey et al. (U.S. Patent # 5,189,734). The Examiner rejected claims 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Bailey, and further in view of Chambers. The Examiner rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Bailey, and further in view of Shah. The Examiner rejected claims 17 and 24-26 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah, and further in view of Bailey. Appellant respectfully traverses these rejections in light of the following remarks.

Appellant notes that to establish a prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP 2143.03.

The rejection of claims 17 and 24-26 is unsupported by the cited references for at least the reasons given above in Argument A.

Furthermore, contrary to the Examiner's assertion, Chih-Lui I and Bailey, whether alone or combined, fail to teach or suggest "wherein said second device is configured to store historical data corresponding to previous temporarily unavailable conditions, wherein said second device is configured to determine said delay value based on the stored historical data" as recited by claim 8.

The Examiner contends that these features are taught in column 6, lines 1-25 and column 4, lines 40-68 of Bailey. Appellant respectfully disagrees. Appellant notes that Bailey teaches "A cellular radio system in which a base station (BS1) establishing two way communication with a mobile (10) requests base stations (BS2 to BS7) of a subset of adjacent cells to reserve a channel so that in the event of handover to a base station in one of these cells this can be executed quicker than if the reservation had not been made". (Abstract) Also, Bailey teaches, in column 6, lines 1-25:

> Base stations can monitor **handover traffic** from adjacent cells to collate a statistical data base of **handover traffic flow** to and from adjacent cells and user's **mobility habits**. With this knowledge, the base station can **estimate the proportion of users likely to require handover** from particular neighbours and the likely **delay before** the associated **handover request is made**. Using such information the base station can maintain and modify a pool of channels which are reserved against allocation to new calls in order that the system can cope with existing calls which it is anticipated will be transferred from one cell to the next. The network controller or base station can warn current users of an impending loss of service due to adjacent cells being full, cells which are temporarily out of use due to a fault in a base station or there are no adjacent cells in the estimated direction of travel. In the event of a base station failing, then those calls which have channels already reserved for their use in adjacent cells may have some chance of being recovered and continued. The call history in a call data packet will allow the network controller or base

station to note a user moving rapidly through a succession of cells and if necessary to adjust the processing priorities. (Emphasis added)

Bailey teaches a mechanism for monitoring handover traffic flow, and for estimating the proportion of users likely to require handover and the likely delay before the associated handover request is made. Bailey defines "handover" as follows: "If the user moves so far away from the base station that he is becoming out of range then the system will reconnect him or "Handover" to a base station which he has been approaching" (see column 1, lines 24-28). In other words, if mobile device 10 is communicating with base station BS1 but moves far away from base station BS1 such that the signal quality is unacceptable, the system reconnects (i.e., handover) mobile device 10 to a closer base station, e.g., base station BS2 (see Figure 1).

Specifically, Bailey teaches assembling a statistical database of handover traffic flow and user's mobility habits. However, this does not correspond to "said second device is configured to store historical data corresponding to previous temporarily unavailable conditions" as recited by claim 8. Furthermore, in Bailey, estimating the likely delay before the associated handover request is made does not correspond to "a delay value corresponding to said temporarily unavailable condition at the second device" (see claim 1) and "said second device is configured to determine said delay value based on the stored historical data" as recited by claim 8.

In accordance, claim 8 is believed to patentably distinguish over Chih-Lui I and Bailey, whether alone or combined. Claims 9-14 depend on claim 8 and are therefore believed to patentably distinguish over the cited references, whether alone or combined, for at least the same reasons.

Likewise, claims 17 and 24 recite features similar to those highlighted above with regard to claim 8 and are therefore believed to patentably distinguish over Chih-Lui I, Shah and Bailey, whether alone or combined, for at least the reasons given in the above paragraphs discussing claim 8.

Since the rejection is not supported by the teaching of the cited references, Appellant respectfully requests reversal of the Examiner's rejection of claims 8-14, 17, and 24-26.

C. Claim 4

The Examiner rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah. Appellant respectfully traverses these rejections in light of the following remarks.

The rejection of claim 4 is unsupported by the cited references for at least the reasons given above in Argument A.

Additionally, Appellant respectfully submits that Chih-Lui I fails to teach or suggest "wherein said delay value corresponds to a **first** value in response to said temporarily unavailable condition corresponding to a **first type** of condition and wherein said delay value corresponds to a **second** value in response to said temporarily unavailable condition corresponding to a **second type** of condition" as recited by claim 4.

The Examiner contends that these features are taught in column 9, line 15 - column 10 line 25 of Chih-Lui I (i.e., "loading conditions" and "L frames"). Appellant respectfully disagrees.

Chih-Lui I teaches, "If the host's load condition is too close to a predetermined load level, step 600, then a retry delay command is sent, in step 600a", and "the base station checks its list of scheduled bursts and adds the mobile to its request list, if the list is shorter than L frames, and transmits the assignment message 415 to the mobile. If the scheduled list is longer than the threshold L, the mobile is told in message 415 to retry later". (Chih-Lui I, Column 8, Lines 51-54 and Column 10, Lines 17-22)

While Chih-Lui I teaches sending a retry delay command if the scheduler list is longer than the threshold L (i.e., based on loading conditions), which is only a single condition, Chih-Lui I fails to teach, "wherein said delay value corresponds to a **first** value in response to said temporarily unavailable condition corresponding to a **first type of condition** and wherein said delay value corresponds to a **second** value in response to said temporarily unavailable condition corresponding to a **second type of condition**" as recited by claim 4. In accordance, claim 4 is believed to patentably distinguish over the cited references.

Since the rejection is not supported by the teaching of the cited references, Appellant respectfully requests reversal of the Examiner's rejection of claim 4.

D. Claim 22

The Examiner rejected claims 22 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah, and further in view of Bailey. Appellant respectfully traverses these rejections in light of the following remarks.

The rejection of claim 22 is unsupported by the cited references for at least the reasons given above in Argument A.

Furthermore, Appellant respectfully submits that Chih-Lui I, Shah, and Bailey, whether alone or combined, fail to teach or suggest, "said second device is configured to generate said delay value based on a number of outstanding responses corresponding to the temporarily unavailable condition".

The Examiner contends that these features are taught in column 6, lines 1-25 of Bailey. Appellant respectfully disagrees.

While Bailey teaches a mechanism for assembling a statistical database of handover traffic flow and user's mobility habits, and for estimating the proportion of users likely to require handover and the likely delay before the associated handover request is made, Bailey fails to teach "generate said delay value **based on** a number of **outstanding** responses **corresponding to** the temporarily unavailable condition" as recited by claim 22. In accordance, claim 22 is believed to patentably distinguish over the cited references, whether alone or combined.

Since the rejection is not supported by the teaching of the cited references, Appellant respectfully requests reversal of the Examiner's rejection of claim 22.

E. Claim 27

The Examiner rejected claim 27 under 35 U.S.C. §103(a) as being unpatentable over Chih-Lui I in view of Shah. Appellant respectfully traverses these rejections in light of the following remarks.

The rejection of claim 27 is unsupported by the cited references for at least the reasons given above in Argument A.

Additionally, Chih-Lui I and Shah, whether alone or combined, fail to teach, "wherein said first device is configured to receive said response including the delay value, wherein said first device is configured to re-convey said first request to said second device at a time corresponding to the delay value, and wherein if the second device detects a temporarily unavailable condition when the first request is again received at the second device, the second device is configured to determine **a second delay value** based on the temporarily unavailable condition detected at the second device" as recited by claim 27.

The Examiner contends that these features are taught in column 8, lines 15-30 and column 11, lines 45-50 of Chih-Lui I. Appellant respectfully disagrees.

While Chih-Lui I teaches that the base station determines a delay parameter and that the mobile device waits for a specific amount of time corresponding to the delay parameter before starting its transmission of the assigned burst length, Chih-Lui I fails to teach, "if the second device detects a temporarily unavailable condition when the first request is **again** received at the second device, the second device is configured to determine **a second delay value** based on the temporarily unavailable condition detected at the second device" as recited by claim 27.

As shown in Fig. 4 (and taught in column 8, lines 15-30), Chih-Lui I teaches that the mobile device starts its transmission after the delay corresponding to the received delay parameter. Chih-Lui I fails to teach determining "a second delay value" if the "temporarily unavailable condition" still exists when "the first request is again received at the second device" as recited by claim 27. In accordance, claim 27 is believed to patentably distinguish over the cited references, whether alone or combined.

Since the rejection is not supported by the teaching of the cited references, Appellant respectfully requests reversal of the Examiner's rejection of claim 27.

E. Claim 30

The Examiner rejected claim 30 under 35 U.S.C. §103(a) as being unpatentable over Seo (U.S. Patent # 6,581,176) in view of Bailey. Appellant respectfully traverses these rejections in light of the following remarks.

Appellant submits that Seo and Baily, whether alone or combined, fail to teach, "wherein a delay value is associated with each of the plurality of temporarily unavailable conditions and each delay value is a programmable value; wherein said second device is

configured to convey a response to said first device including the delay value associated with a detected one of the plurality of temporarily unavailable conditions at the second device" as recited by claim 30.

The Examiner contends that the above-highlighted features of claim 30 are taught in column 7, lines 30-65 of Seo. Appellant respectfully disagrees. Seo teaches, at column 7, lines 30-65:

> If the transmitting station A receiving the NAK control frames receives a first NAK control frame, a duplication for three rest NAK control frames can be checked by referring to the fields NAK_SEQ within the frames. After checking, three duplicated NAK control frames are disregarded, and the missed user data frames are re-transmitted to the receiving station B two times by checking a value "2" of the field CTL of the corresponding NAK control frame.
>
> As afore-mentioned, an inventive method for transmitting RLP NAK control frames and user data frames between a terminal device and a base station in the mobile radio communication system such as CDMA has merits as follows.
>
> First, the receiving station B sends one NAK control frame for respective user data frames finished at equal time when a timer for an NAK is expired, thereby **resulting in reducing the total number of NAK control frames so enabling to reduce the delay time of user data frames transmitted after that time**, namely frames received at a higher rank hierarchy, from a view of the receiving station B transmitting the NAK control frames. In addition, the maximum work processing amount can be attained since the number of data frames transmitted per unit time increases.
>
> Secondly, in the inventive method the retransmission number of missed user data frames is decided, separately from the transmission number of the same NAK control frames, though in the conventional method the retransmission number of the missed user data frames depends upon the transmission number of the NAK control frames. Therefore, in case a quality of a radio traffic channel in an NAK control frame sending direction is not good, it is available to increase the transmission number of the same NAK control frames. Moreover, it is no need to surely make the retransmission number of missed user data and the transmission number of NAK control frames to be same.

While Seo teaches, "reducing the total number of NAK control frames so enabling to reduce the delay time of user data frames transmitted after that time", Seo fails to teach, "wherein **a delay value** is associated with each of the plurality of **temporarily**

unavailable conditions and each delay value is a programmable value; wherein said second device is configured to **convey a response** to said first device **including the delay value** associated with a detected one of the plurality of **temporarily unavailable conditions** at the second device" as recited by claim 30.

Seo teaches reducing a delay time of user data frames that are sent. However, Seo fails to teach, "a delay value is associated with each of the plurality of temporarily unavailable conditions", and "convey a response to said first device **including the delay value** associated with a detected one of the plurality of temporarily unavailable conditions at the second device" as recited by claim 30.

Furthermore, while Seo teaches, "the retransmission number of the missed user data frames depends upon the transmission number of the NAK control frames", Seo fails to teach each delay value is a programmable value.

In accordance, claim 30 is believed to patentably distinguish over Seo and Bailey, whether alone or combined.

Since the rejection is not supported by the teaching of the cited references, Appellant respectfully requests reversal of the Examiner's rejection of claim 30.

VIII. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejections of claims 1-30 were erroneous, and reversal of Examiner's decision is respectfully requested.

The Commissioner is authorized to charge any fees which may be required, or credit any overpayment, to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5181-38400/BNK.

Respectfully submitted,

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IX. CLAIMS APPENDIX

The claims on appeal are as follows.

1. A computer system comprising:

a first device;

a second device coupled to said first device;

wherein said first device is configured to convey a first request to said second device, wherein said second device is configured to receive said first request, wherein said second device is configured to detect a temporarily unavailable condition, wherein said second device is configured to convey a response to said first device corresponding to said first request, and wherein said response includes a delay value corresponding to said temporarily unavailable condition; and

wherein, in response to said first device re-conveying said first request to said second device in excess of a retry limit, said first device and said second device are configured to cause an error recovery mechanism to be initiated.

2. The computer system of claim 1, wherein said first device is configured to receive said response, and wherein said first device is configured to re-convey said first request to said second device at a time corresponding to said delay value.

3. The computer system of claim 1, wherein in response to receiving the first request said second device is configured to generate said delay value according to a type of said temporarily unavailable condition detected at the second device.

4. The computer system of claim 1, wherein said delay value corresponds to a first value in response to said temporarily unavailable condition corresponding to a first type of condition and wherein said delay value corresponds to a second value in response to said temporarily unavailable condition corresponding to a second type of condition.

5. The computer system of claim 1, wherein said second device is configured to calculate said delay value using one or more variables that correspond to one or more previous temporarily unavailable conditions.

6. The computer system of claim 1, wherein said delay value corresponds to an encoded value.

7. The computer system of claim 1, wherein one of different types of error recovery mechanism is to be initiated based on a type of temporarily unavailable condition at the second device.

8. A computer system comprising:

a communications medium;

a first device coupled to said communications medium; and

a second device coupled to said communications medium;

wherein said first device is configured to convey a first request to said second device, wherein after receiving said first request said second device is configured to detect a temporarily unavailable condition, wherein said second device is configured to convey a response to said first device including a delay value corresponding to said temporarily unavailable condition at the second device;

wherein said second device is configured to store historical data corresponding to previous temporarily unavailable conditions, wherein said second device is configured to determine said delay value based on the stored historical data.

9. The computer system of claim 8, wherein said communications medium comprises a switching network.

10. The computer system of claim 8, wherein said communications medium comprises a shared bus.

11. The computer system of claim 8, wherein said communications medium comprises an arbitrated loop.

12. The computer system of claim 8, wherein said second device is configured to calculate said delay value using one or more variables that correspond to one or more previous temporarily unavailable conditions.

13. The computer system of claim 8, wherein said delay value corresponds to an encoded value.

14. The computer system of claim 8, wherein, in response to said first device re-conveying said first request in excess of a retry limit, said first device and said second device are configured to cause an error recovery mechanism to be initiated, and wherein said error recovery mechanism is configured to perform an action according to said response.

15. A method comprising:

conveying a first request from a first device to a second device;

detecting a temporarily unavailable condition at said second device;

generating a delay value corresponding to said temporarily unavailable condition;

conveying a response corresponding to said first request from said second device to said first device, wherein said response includes said delay value; and

in response to said first device re-conveying said first request to the second device in excess of a retry limit, initiating an error recovery mechanism.

16. The method of claim 15, further comprising:

re-conveying said first request from said first device to said second device at a time corresponding to said delay value.

17. The method of claim 15, further comprising:

said second device storing historical data corresponding to previous temporarily unavailable conditions and determining said delay value based on the stored historical data.

18. The method of claim 15, further comprising:

determining the retry limit associated with the first request.

19. The method of claim 15, wherein said generating further comprises:

determining a type of said temporarily unavailable condition; and

generating said delay value according to said type of said temporarily unavailable condition.

20. The method of claim 15, further comprising:

generating said delay value using one or more variables that correspond to one or more previous temporarily unavailable conditions.

21. The computer system of claim 1, wherein one of different types of error recovery mechanism is to be initiated based on the delay value corresponding to the response conveyed from the second device to the first device.

22. The computer system of claim 1, wherein said second device is configured to generate said delay value based on a number of outstanding responses corresponding to the temporarily unavailable condition.

23. The computer system of claim 1, wherein said second device is configured to generate said delay value according to a set value for each type of temporarily unavailable condition, a programmed value for each type of temporarily unavailable condition, or a dynamically calculated value for each type of temporarily unavailable condition.

24. The computer system of claim 1, wherein said second device is configured to store historical data corresponding to previous temporarily unavailable conditions, wherein said second device is configured to determine said delay value based on the stored historical data.

25. The computer system of claim 24, wherein said delay value may be generated according to a static heuristic based on the previous temporarily unavailable conditions.

26. The computer system of claim 24, wherein said delay value may be generated according to a dynamic algorithm based on the previous temporarily unavailable conditions.

27. The computer system of claim 1, wherein said first device is configured to receive said response including the delay value, wherein said first device is configured to re-convey said first request to said second device at a time corresponding to the delay value, and wherein if the second device detects a temporarily unavailable condition when the first request is again received at the second device, the second device is configured to determine a second delay value based on the temporarily unavailable condition detected at the second device.

28. The computer system of claim 3, wherein said type of said temporarily unavailable condition is a temporarily loss of system resources, a temporary lack of processing resources on the second device, or a lack of a valid virtual to physical address translation.

29. The computer system of claim 1, wherein said first device is configured to ignore said delay value received from the second device and independently determine when to re-convey said first request.

30. A computer system comprising:

a first device; and

a second device coupled to said first device;

wherein said first device is configured to convey a first request to said second device, wherein after receiving said first request said second device is configured to detect any of a plurality of temporarily unavailable conditions, wherein a delay value is associated with each of the plurality of temporarily unavailable conditions and each delay value is a programmable value;

wherein said second device is configured to convey a response to said first device including the delay value associated with a detected one of the plurality of temporarily unavailable conditions at the second device.

X. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:
David A. Wood et al.

§ Group Art Unit: 2194
§ Examiner: Hoang, Phuong N.
§ Atty. Dkt. No.: 5181-38400
§ P4359

Serial No. 09/487,529

Filed: 01/19/2000

For: System and Method for Enhancing Communication Between Devices in a Computer System

CERTIFICATE OF MAILING
37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below:

Mario J. Lewin
Name of Registered Representative

11/28/06 [signature]
Date Signature

FEE AUTHORIZATION

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The Commissioner is hereby authorized to charge the following fee to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account Number 50-1505/5181-38400:

Fee:	Appeal Brief
Amount:	$500.00
Attorney Docket No.:	5181-38400

The Commissioner is also authorized to charge any extension fee or other fees which may be necessary to the same account number.

Respectfully submitted,

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